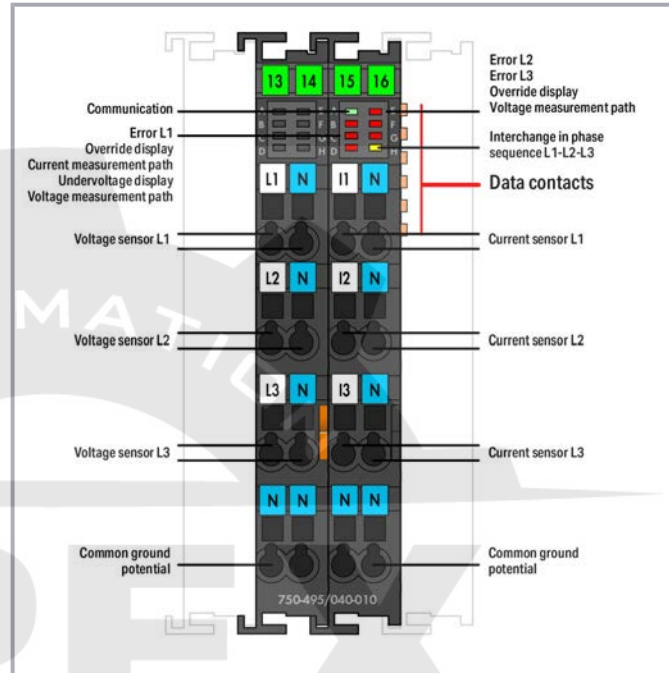
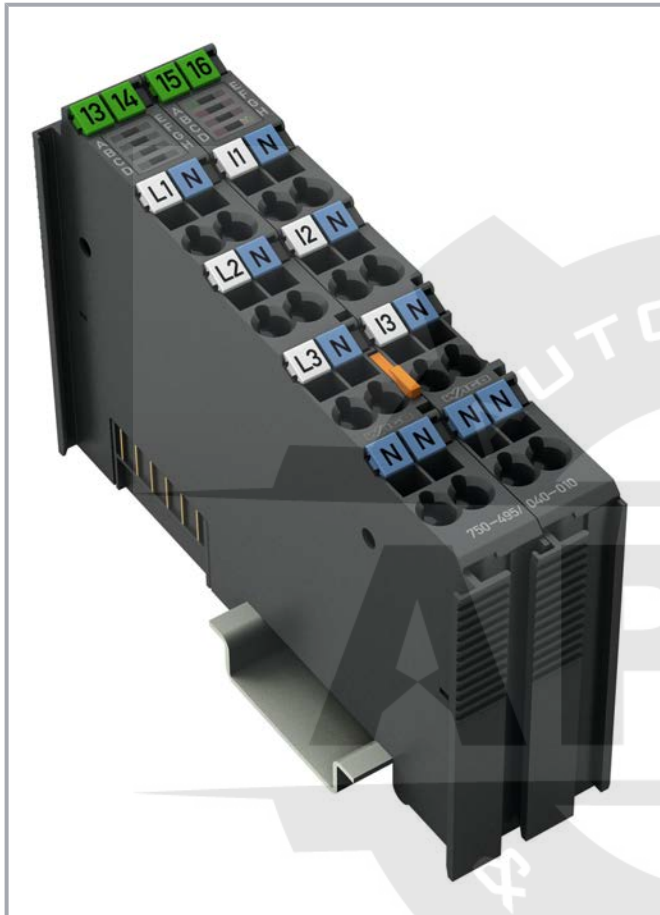
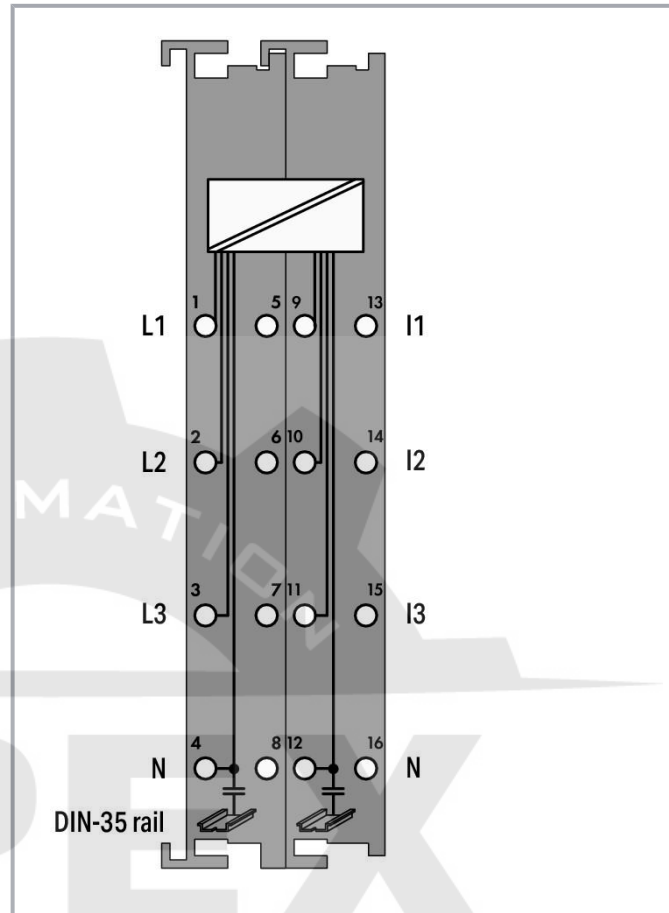
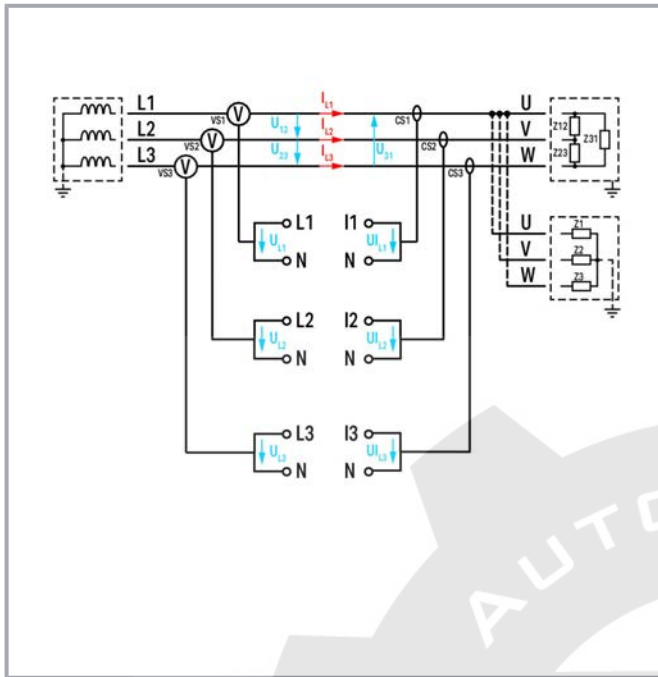




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Item description

The 3-Phase Power Measurement Module (750-495/040-010) (also referred to as I/O module) measures the electrical data of a 3-phase supply network in the medium voltage range up to 20 kVRMS using voltage sensors per IEC 60044-7 (new IEC 61869-11) and current sensors per IEC 60044-8 (new IEC 61869-10).

This I/O module measures rated voltages up to ULL = 20 kVRMS (ULN = 11.547 kVRMS) and rated currents up to 300 ARMS. The module provides a large number of measured quantities, allowing comprehensive analysis of the 3-phase network. These metrics enable the operator to optimize supply to their systems, protecting them from damage and failure.

The voltages of the three phases are connected via voltage sensors to terminals L1, L2, L3 and N, the currents via current sensors to terminals I1, I2, I3 and N. Based on these input signals, the I/O module determines various AC measured variables, such as voltage and current, reactive, apparent and active power, energy consumption, power factor, phase angle and frequency. Harmonic analysis (current/voltage) is also possible for a selectable phase up to the 41st harmonic. The variables are available in the process image, without requiring high processing power from the controller.

The device is ideal for operation in extreme environments thanks to:

- Extended temperature range
- Greater immunity to impulse voltages and electromagnetic interference
- Higher vibration and shock resistance

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Data

Technical data

Number of measurement inputs	6 (3 input pairs for voltage and current measurement sensors)
Signal type	Power measurement
Signal form	Any periodic signals (considering the threshold frequencies)
Resolution [bit]	24 Bit
Data width	2 x 128-bit data, 2 x 64-bit control/status
Voltage path input resistance (typ.)	200.3 k Ω
Current path input resistance (typ.)	20.8 Ω
Reference for measurement error	AC current/voltage
Measurement error, deviation max (upper-range value) $\leq \pm$	0.3 %
Frequency range (mains frequency)	45 ... 65 Hz
Frequency range (harmonics analysis)	45 ... 2665 Hz
Limit frequency	8.6 kHz
Calculated values	Line-to-line voltage, power output, energy, power factors, mains frequency, harmonic analysis (up to the 41st harmonic), THD
Measurement method	True RMS measurement
Supply voltage (system)	5 VDC; via data contacts
Power consumption (5 V system supply)	100 mA
Rated surge voltage	4 kV
Overvoltage category	III (EN 61010)

Connection data

Connection technology: inputs / outputs	16 x CAGE CLAMP®
Connection type (1)	Inputs/outputs
Solid conductor	0.25 ... 2.5 mm ² / 24 ... 14 AWG
Fine-stranded conductor	0.25 ... 2.5 mm ² / 24 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

Physical data

Width	24 mm / 0.945 inch
Height	100 mm / 3.937 inch
Depth	67.8 mm / 2.669 inch
Depth from upper edge of DIN-rail	60.6 mm / 2.386 inch

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Mechanical data

Mounting type	DIN-35 rail
---------------	-------------

Material data

Housing material	Polycarbonate; polyamide 6.6
Fire load	0.202 MJ
Weight	98.8 g
Conformity marking	CE

Environmental requirements

Surrounding air temperature (operation)	-40 ... 70 °C
Surrounding air temperature (storage)	-40 ... 85 °C
Protection type	IP20
Operating altitude	without temperature derating: 0 ... 2000 m; with temperature derating: 2000 ... 5000 m (0.5 K/100 m); 5000 m (max.)
Mounting position	horizontal (standing/lying); vertical
Relative humidity (without condensation)	95 %
Relative humidity (with condensation)	Short-term condensation per Class 3K7/IEC EN 60721-3-3 and E-DIN 40046-721-3 (except for wind-driven precipitation, water and ice formation)
Vibration resistance	per IEC 60068-2-6 (acceleration: 5g), EN 60870-2-2, IEC 60721-3-1, -3, EN 50155; EN 61373
Shock resistance	per IEC 60068-2-27 (15g/11 ms/half-sine/1,000 shocks; 25g/6 ms/1,000 shocks), EN 50155, EN 61373
EMC immunity to interference	per EN 61000-6-1, -2; EN 61131-2; marine applications; EN 50121-3-2; EN 50121-4, -5; EN 60255-26; EN 60870-2-1; EN 61850-3; IEC 61000-6-5; IEEE 1613; VDEW: 1994
EMC emission of interference	per EN 61000-6-3, -4, EN 61131-2, EN 60255-26, marine applications, EN 60870-2-1, EN 61850-3, EN 50121-3-2, EN 50121-4, -5
Exposure to pollutants	per IEC 60068-2-42 and IEC 60068-2-43
Permissible pollutant concentration H ₂ S at a relative humidity < 75%	10 ppm
Permissible pollutant concentration SO ₂ at a relative humidity < 75%	25 ppm

Commercial data

Packaging type	BOX
Country of origin	DE

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GTIN	4055144024395
Customs tariff number	8538901000

Optional accessories

Carrier rail

	Item no.: 210-112 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm; www.wago.com/210-112 silver-colored	
	Item no.: 210-113 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored	www.wago.com/210-113
	Item no.: 210-114 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored	www.wago.com/210-114
	Item no.: 210-115 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm; www.wago.com/210-115 silver-colored	
	Item no.: 210-118 Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored	www.wago.com/210-118
	Item no.: 210-196 Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored	www.wago.com/210-196
	Item no.: 210-197 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored	www.wago.com/210-197
	Item no.: 210-198 Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored	www.wago.com/210-198
	Item no.: 210-504 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715; silver-colored	www.wago.com/210-504
	Item no.: 210-505 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715; silver-colored	www.wago.com/210-505
	Item no.: 210-506 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715; silver-colored	www.wago.com/210-506
	Item no.: 210-508 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715; silver-colored	www.wago.com/210-508

Shield termination

	Item no.: 790-108 Shield clamping saddle; 11 mm wide; 0-8 mm diameter conductors	www.wago.com/790-108
	Item no.: 790-116 Shield clamping saddle; 19 mm wide; 7-16 mm diameter conductors	www.wago.com/790-116

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**Item no.: 790-124**

Shield clamping saddle; 27 mm wide; 6-24 mm diameter conductors

www.wago.com/790-124**Item no.: 790-140**

Shield clamping saddle; 43 mm wide; 22-40 mm diameter conductors

www.wago.com/790-140**Item no.: 790-208**

Shield clamping saddle; 12.4 mm wide; 3-8 mm diameter conductors

www.wago.com/790-208**Item no.: 790-216**

Shield clamping saddle; 21.8 mm wide; 6-16 mm diameter conductors

www.wago.com/790-216**Item no.: 790-220**

Shield clamping saddle; 30 mm wide; 6-20 mm diameter

www.wago.com/790-220**System housing****Item no.: 850-804**

IP65 enclosure; Stainless steel; WxHxD (400x123x200 mm); 4 x M20, 16 x M16, 28 x M12 cable grip

www.wago.com/850-804**Item no.: 850-804/000-001**

IP65 enclosure; Stainless steel; WxHxD (400x123x200 mm); 2 x M20, 13 x M16, 32 x M12 cable grip

www.wago.com/850-804/000-001**Item no.: 850-805**

IP65 enclosure; Stainless steel; WxHxD (600x123x200 mm); 4 x M20, 19 x M16, 67 x M12 cable grip

www.wago.com/850-805**Item no.: 850-814/002-000**

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (200x120x200 mm); without flange plate

www.wago.com/850-814/002-000**Item no.: 850-815/002-000**

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (300x120x200 mm); without flange plate

www.wago.com/850-815/002-000**Item no.: 850-816/002-000**

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate

www.wago.com/850-816/002-000**Item no.: 850-817/002-000**

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (600x120x200 mm); without flange plate

www.wago.com/850-817/002-000**Item no.: 850-825**

IP65 enclosure; Aluminium (RAL 7032); WxHxD (160x100x160 mm); 9 x M12, 4 x M20

www.wago.com/850-825**Item no.: 850-826**

IP65 enclosure; Aluminium (RAL 7032); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip

www.wago.com/850-826**Item no.: 850-826/002-000**

IP65 enclosure; Aluminium (RAL 7035); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip

www.wago.com/850-826/002-000**Item no.: 850-827**

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	IP65 enclosure; Aluminium (RAL 7032); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip	www.wago.com/850-827
	Item no.: 850-827/002-000 IP65 enclosure; Aluminium (RAL 7035); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip	www.wago.com/850-827/002-000
	Item no.: 850-828 IP65 enclosure; Aluminium (RAL 7032); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip	www.wago.com/850-828
	Item no.: 850-828/002-000 IP65 enclosure; Aluminium (RAL 7035); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip	www.wago.com/850-828/002-000
	Item no.: 850-834 IP65 enclosure; Polyester (RAL 7032); WxHxD (164x100x164 mm); 9 x M12, 4 x M20	www.wago.com/850-834
	Item no.: 850-835 IP65 enclosure; Polyester (RAL 7032); WxHxD (244x100x164 mm); 4 x M20, 4 x M16, 14 x M12 cable grip	www.wago.com/850-835
	Item no.: 850-836 IP65 enclosure; Polyester (RAL 7032); WxHxD (324x100x164 mm); 4 x M20, 8 x M16, 17 x M12 cable grip	www.wago.com/850-836

Marking accessories

	Item no.: 2009-145 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white	www.wago.com/2009-145
	Item no.: 2009-145/000-002 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; yellow	www.wago.com/2009-145/000-002
	Item no.: 2009-145/000-005 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; red	www.wago.com/2009-145/000-005
	Item no.: 2009-145/000-006 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; blue	www.wago.com/2009-145/000-006
	Item no.: 2009-145/000-007 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; gray	www.wago.com/2009-145/000-007
	Item no.: 2009-145/000-012 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; orange	www.wago.com/2009-145/000-012
	Item no.: 2009-145/000-023 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; green	www.wago.com/2009-145/000-023

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	Item no.: 2009-145/000-024 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; violet	www.wago.com/2009-145/000-024
	Item no.: 248-501 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white	www.wago.com/248-501
	Item no.: 248-501/000-002 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow	www.wago.com/248-501/000-002
	Item no.: 248-501/000-005 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red	www.wago.com/248-501/000-005
	Item no.: 248-501/000-006 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue	www.wago.com/248-501/000-006
	Item no.: 248-501/000-007 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray	www.wago.com/248-501/000-007
	Item no.: 248-501/000-012 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange	www.wago.com/248-501/000-012
	Item no.: 248-501/000-017 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green	www.wago.com/248-501/000-017
	Item no.: 248-501/000-023 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green	www.wago.com/248-501/000-023
	Item no.: 248-501/000-024 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet	www.wago.com/248-501/000-024
	Item no.: 750-103 Group marker carrier	www.wago.com/750-103
	Item no.: 750-107 Group marker carrier	www.wago.com/750-107

Downloads

Documentation

Manual

3-Phase Power Measurement; 20 kVAC 300 A; Extreme

V 1.0.1

pdf

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Mar 18, 2021

6.6 MB

System Description

750 XTR Series I/O-System – General Product Information		pdf 1.1 MB	Download
System Manual XTR	V 1.3.0	pdf 6.3 MB	Download
Basic conditions and recommendations for higher operational safety	Feb 1, 2021		
Overview on WAGO-I/O-SYSTEM 750 approvals		pdf 780.2 kB	Download

Additional Information

Disposal; Electrical and electronic equipment, Packaging	V 1.0.0	pdf 265.8 kB	Download
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Libraries

Library

PowerMeasurement_495_040_010.lib	1.1.3	zip 858.7 kB	Download
Library and function block description for Power Measurement Module 750-495/040-010	Jun 15, 2020		

Environmental Product Compliance

Compliance Search

Environmental Product Compliance 750-495/040-010	URL	Download
3-Phase Power Measurement; 20 kVAC 300 A; Extreme		

Installation Notes

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Product family

Couplers & I/O modules: XTR

I/O-System 750 XTR: Dort automatisieren, wo jedes andere System an seine Grenzen stößt – und das zuverlässig und wirtschaftlich! XTR – dieses Kürzel im Systemnamen steht für extremen Schutz vor klimatischen Einflüssen, Schwingungen, Erschütterungen und Überspannungen.

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